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Hajj: journey of a lifetime

Abdul Rashid Gatrad, Aziz Sheikh

Introduction

Journeying to Mecca for Hajj (pilgrimage) is no ordinary undertaking for many Muslims (boxes 1 and 2; fig 1). Hajj represents the culmination of years of spiritual preparation and planning. Once they have completed the pilgrimage, pilgrims are given the honourific title Hajji (pilgrim).

Hajj commemorates the patriarch Abraham's readiness to sacrifice his son Ishmael in biblical times. Performing Hajj is one of the five pillars of Islam and is therefore obligatory for all adult Muslims who can afford to undertake the journey and are in good health. Hajj lasts for five days, and, as the Islamic calendar is lunar, the precise Gregorian calendar dates of the Hajj season will vary each year. Muslims travel to Mecca at other times to perform a lesser pilgrimage called Umrah.

Mecca's resident population of about 200 000 swells to well over two million during the Hajj season. This rapid increase in numbers poses many challenges, including ensuring adequate food, water, and sanitary facilities in Mecca and the neighbouring deserts of Mina and Arafat, which pilgrims must visit as part of the Hajj ritual.

Although the journey is incumbent on a Muslim only once in a lifetime, many Muslims, particularly those living in the West, will journey more often. For example, more than 20 000 Britons do the Hajj each year, and the current annual figure for Umrah stands at almost 29 000.³ In view of the very large numbers of people from disparate regions and the hostile climate of the Arabian desert, the chances of disease, particularly in elderly and infirm people, are high.

In this paper, we briefly describe the main rites of the Hajj before focusing on particular health risks associated with it and measures that may be taken to minimise them. Our main aim is to offer practical advice to healthcare professionals providing care to people intending to travel on Hajj.

Sources

We drew on materials identified from searches of Medline, internet searches of Islamic websites, fatwa banks, and our personal libraries. To supplement these sources, we drew on our personal experiences of having travelled to Saudi Arabia on both Hajj and Umrah, running Hajj preparatory courses, and issuing medical advice to people intending to travel on Hajj and Umrah.

Summary points

Hajj, the journey to the Sacred Mosque in Mecca, is a once in a lifetime obligation for all adult Muslims who are physically and financially able

Each year, more than two million people globally, including 1% of the British Muslim community, take part in the Hajj

If the pilgrim is unprepared, the health risks associated with the Hajj are considerable; most important are the risks of heat exhaustion, heatstroke, and infectious diseases

All pilgrims must be vaccinated against meningococcal disease; a "Hajj travel consultation" is thus mandatory, offering the ideal opportunity for health promotional advice

Manor Hospital,
Walsall WS2 9PS
Abdul Rashid
Gatrad
*consultant
paediatrician*

Division of
Community Health
Sciences: GP
Section, University
of Edinburgh,
Edinburgh
Aziz Sheikh
*professor of primary
care research and
development*

Correspondence to:
A R Gatrad
sec.gatrad@
walsallhospitals.nhs.uk

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The rites of Hajj

Many prospective pilgrims fail to appreciate that Hajj is physically demanding. It is the most complex of the Islamic rituals and involves, among other things, walking long distances and camping in desert tents, often with only the most basic sanitation.⁴ Central in these activities is the pilgrim's presence on the desert plain of Arafat, from noon until sundown. Here, dressed in the simplest possible garb made up of two pieces of unstitched cloth for men (Ihram), with women wearing

Box 1: The Sacred Mosque (Ka'bah)

"A curious object, that Ka'bah! There it stands at this hour, in the black cloth-covering the Sultan sends it yearly; 'twenty-seven cubits high'; with circuit, with double circuit of pillars, with festoon-rows of lamps and quaint ornaments: the lamps will be lighted again this night—to glitter again under the stars. An authentic fragment of the oldest Past. It is the Qiblah (direction of prayer) of all Muslims: from Delhi all onwards to Morocco, the eyes of innumerable praying men are turned towards it, five times, this day and all days: one of the notablest centres in the Habitation of Men."—Thomas Carlyle¹

Box 2: Journeying home

"And when, as a pilgrim, he stands before the Ka'bah in Mecca (after circling it seven times), the centrality already prefigured by his orientation when he prayed far off is made actual. Clothed only in two pieces of plain, unsewn cloth, he has left behind him the characteristics which identified him in the world, his race, his nationality, his status; he is no longer so-and-so from such-and-such a place, but simply a pilgrim.

"Beneath his bare feet, like mother-of-pearl, is the pale marble of this amphitheatre at the centre of the world, and although he is commanded to lower his eyes when praying elsewhere, he is now permitted to raise them and look upon the Ka'bah, which is the earthly shadow of the Pole or Pivot around which circle the starry heavens. Although Paradise may still seem far distant, he has already come home."—Gai Eaton²

Box 3: Next please!

"In the next few days, prostration from (heat) exposure passed at a rapid clip through the hotel. Striking down groups of four or five, it moved from room to room and floor to floor. Soon the hotel began to resemble an infirmary, with dozens of guests in various stages of illness strewn around the lobby every night. Guides were not spared.

"Every day the temperature climbed by one or two degrees. At midnight the mercury remained above one hundred Fahrenheit."—Michael Wolfe⁶

their usual clothing with a headscarf, pilgrims will spend much of the day standing in humility and prayer, performing a dress rehearsal for the final standing before God on Judgment Day.

Because of the large numbers of people, performing even the simplest rites can take an extraordinary length of time. A religious dispensation exists for those in poor health, and many will make use of this allowance after consultation with their doctor⁵; some will, however, travel against medical advice, often in the hope of dying in the Holy Land. For Muslims living in the West, the decision of whether or not to travel on health grounds is often more complex, as most health professionals are unaware of what the

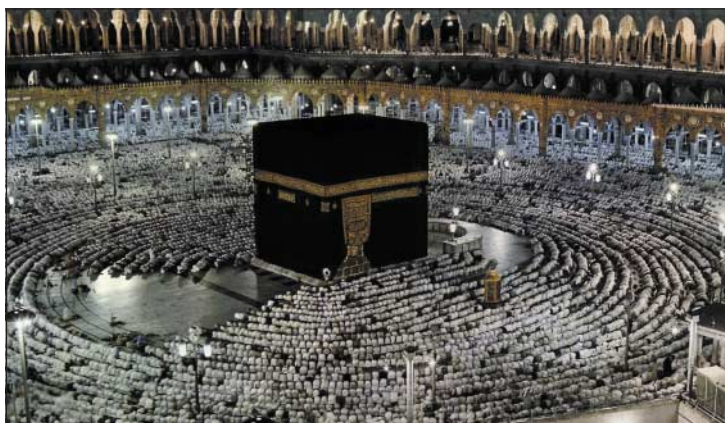


Fig 1 Holy Ka'bah, Mecca, Saudi Arabia

Hajj entails or its associated health risks and, therefore, typically find it difficult to offer an informed opinion.

Minimising risks to health**Problems of sun and heat**

Travelling to Mecca in advance of the Hajj is sensible, particularly for people unaccustomed to the oppressive climate of the Arabian desert (box 3). Pilgrims need to be made aware that acclimatisation to very high temperatures—which occurs through a gradual increase in sweat production, thereby facilitating cooling through increased water evaporation—can take between one and two weeks.⁷

Sunburn is an important hazard, particularly for light skinned people. An appropriate strength sun block will minimise the risks of burning, with its associated risk of malignant tumours. Sun exposure must be kept to a minimum as discussed below.

Even when Hajj occurs during winter, the average temperature is over 30°C during the day and 20°C at night. Heat exhaustion and heatstroke are common and can be fatal, as evidenced by one study that reported more than 1700 fatalities in a single Hajj season, most of which were judged to be heat related.⁸ The Saudi authorities, in their role as the pilgrims' hosts, undertake valuable health promotional work, distributing leaflets and issuing radio and television warnings of the dangers of excessive sun exposure. The number of people who still die of heat is evidence that the message needs to be reiterated at every possible opportunity.

During the Hajj, men are prohibited from directly covering their heads (with a hat or scarf, for example), thereby increasing the risk of heat exposure. The usefulness of a good quality umbrella, preferably white in colour, to deflect the sun "away," cannot be overemphasised (fig 2). Such simple measures could be life saving if the pilgrim was to lose his or her bearing in the desert, as is easily and not infrequently done. Box 4 summarises other important precautions.

Heat exhaustion typically occurs in people who are not acclimatised and undertake strenuous exercise. Water depletion or a combination of salt and water depletion due to excessive sweating is the underlying cause. Up to 5 litres of water and up to 20 g of salt a day may be lost. Most cases are relatively mild, with symptoms of weakness, lightheadedness, and muscle cramps that will respond to a combination of rest, cool-

Box 4: Precautionary measures to minimise the risk of heat exhaustion and heatstroke

- Avoid spending long periods in the sun, particularly when it is at its zenith
- Travel by night whenever possible (which may also avoid stampedes)
- Keep your head covered during the day (with an umbrella if necessary)
- Consume large volumes of fluid throughout the day
- Always keep a canister of fluid in your possession
- Increase dietary salt intake or use salt tablets
- Avoid travelling in "open top" buses

ing, and fluid and salt replacement. Without adequate treatment, however, heatstroke may occur.^{9 10} Although salt tablets may be taken, they can cause vomiting and gastrointestinal upset, so we suggest that a quarter of a level teaspoon of salt (approximately 1 g) is added to a pint, or two level teaspoons to a gallon (approximately 5 l), of drinking water during travel; this concentration is below the taste threshold.¹¹

Heatstroke is a medical emergency (box 5) and can occur within 20 minutes of severe exertion.¹² Skin is hot to the touch, and there is a notable absence of sweating. Young children, elderly people, and people with diabetes are most at risk. The extreme rise in body temperature makes prompt and appropriate treatment imperative. Patients should be moved into the shade, stripped, cooled with a combination of fanning and spraying the body with tepid water, and, if conscious, given fluid replacement, while expert medical attention is urgently sought.

Since the early 1980s, cooling units have been installed along the pilgrim route. Emergency services will often suspend patients in a hammock-like bed and spray them liberally with an air-water mixture. The water is warm and cools the body through evaporation, simultaneously preventing further dehydration. These simple devices are significantly quicker in reducing body temperature than the usual method of placing patients in an ice bath, possibly because vasoconstriction and shivering are not induced—responses that ultimately cause the body temperature to rise.¹³

Most pilgrims travel on foot, so good quality footwear is important, although in our experience it is often overlooked. During the day, the desert sand typically becomes burning hot. Care needs to be taken to avoid walking barefoot because of the serious risk of burns to the foot. This is particularly important for people with diabetic neuropathy, as very extensive damage may quickly occur, often compounded by the problems of poor wound healing and the increased risk of infection. Footwear must be removed before prayers, and people who have not been on Hajj are

Box 5: Symptoms suggesting heat exhaustion and heatstroke

- Fatigue, weakness, and leg cramps
- Headache, nausea, and vomiting
- Giddiness
- Delirium
- Syncope and coma

often unaware of the ease with which footwear can become confused with another pilgrim's and thus be inadvertently taken. Pilgrims may be forced to walk barefoot in an attempt to reclaim their footwear, with potentially devastating consequences. Thus pilgrims should be advised to carry footwear in a bag at all times.

Infectious diseases

An outbreak of group A meningococcal meningitis occurred among British Muslim pilgrims after the 1987 Hajj. Eighteen primary cases occurred among pilgrims and 15 subsequent cases among their direct and indirect contacts.^{14 15} Similarly, outbreaks of W135 meningococcal disease occurred among British pilgrims in 2000 and 2001. The Saudi authorities now insist that all pilgrims are vaccinated with two doses of ACWY Vax (three months apart) with conjugate meningitis vaccination.¹⁶ Immunity is thought to last for approximately three years. A medical certificate confirming vaccination is now required before visas will be issued.

Vaccination against hepatitis A and malaria prophylaxis, together with advice on measures to minimise the risk of exposure, are important. We recommend vaccination against hepatitis B (see below). In addition to checking tetanus and polio status, typhoid and diphtheria vaccination should be considered. Many people decide to travel on from the Hajj, particularly to Africa and the Indian sub-continent, so taking details of travel plans is important. Pilgrims need to be reminded of the importance of seeking medical attention for any unexpected symptoms, such as fever, diarrhoea, or jaundice, or a high fever on their return. A persistent cough is also significant because of the reported high incidence of pneumonia (particularly tuberculous) among pilgrims.^{17 18}

One of the rites of the Hajj is for men to have the head shaved (although trimming the hair is also acceptable). Most will have their heads shaved, often in makeshift centres run by opportunistic "barbers." A razor blade is commonly used, and it may be used on several scalps before being ultimately discarded. The risks of important bloodborne infections such as HIV and hepatitis B and C are obvious, especially considering that many pilgrims will come from regions where such infections are now endemic. Pilgrims need to be aware of these dangers and should insist on the use of a new blade. Physical relationships are prohibited during Hajj, even between husband and wife, so the risks of acquiring sexually transmitted diseases are minimal.

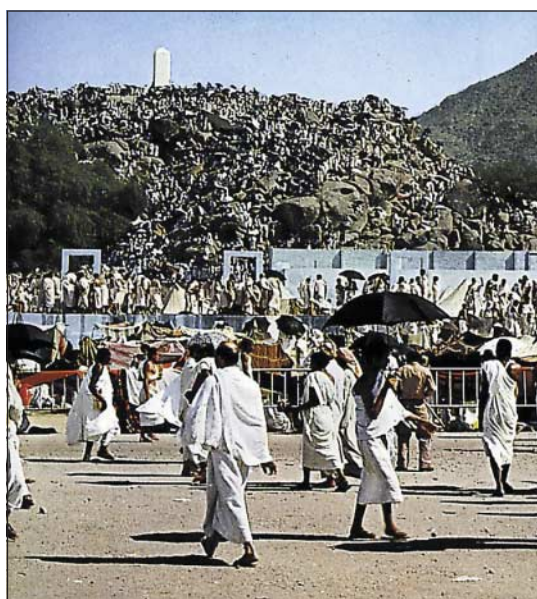


Fig 2 Umbrellas (preferably white) provide useful shade

Injuries

Minor injuries are relatively common, particularly to the toes; these typically result from inadvertently being stamped on while circumambulating the Ka'bah bare-foot. More serious injuries, some of which prove to be fatal, occur each year during stampedes in Mina as pilgrims undertake the stoning rite (fig 3). Pilgrims should be advised to avoid peak times, and old and infirm people should be advised to consider appointing a proxy for the performance of this rite. Major trauma and death from road traffic crashes is a further important cause of injury in pilgrims.¹⁹

Chronic disorders

Travellers with chronic medical conditions should take sufficient supplies of their usual drugs and also carry a written record of these, giving their generic names, in case further supplies are needed. A letter documenting medical problems and drugs will allow rapid assessment should an illness occur and will also be of help through customs.

Diabetes

Diabetes is common among South Asian Muslims and often leads to health problems during the Hajj. During travel, insulin should not be put in the luggage hold of an aircraft as it may freeze. Insulin should be refrigerated, but not in the freezer compartment, during the stay in Saudi Arabia.

If any illness occurs, diabetic control will need careful monitoring and insulin may be temporarily needed in people with type 2 diabetes. Although problems of hyperglycaemia and hypoglycaemia can occur, the second of these is more common as a result of increased physical activity.²⁰ Food intake may therefore have to be increased before exertion. Hypoglycaemia may also occur if the insulin in Saudi Arabia is different from that of the patient's country of origin, so anyone accompanying a person with diabetes should be aware of the symptoms of hypoglycaemia.

We are aware of an education programme that includes classes on factors relating to diabetes, along with more practical matters concerning the Hajj.²¹ During these classes advice on footwear, insulin storage, food, drug doses, and immunisations are discussed. Such innovative projects could be further promoted by the



Fig 3 The stoning rite in Mina

Box 6: Considerations in the "Hajj travel consultation"

- Fitness to perform the Hajj
- Heat exhaustion and heatstroke
- Foot burns and sunburn
- Infectious diseases
- General travel advice
- Emergency numbers: ambulance 997; police 999

Department of Health working collaboratively with, for example, the Muslim Council of Britain.

General advice

Menstruation is considered a state of ritual impurity, so menstruating women are not permitted to perform the Hajj. This often causes a great deal of concern, which is perfectly understandable if one remembers the importance of the journey and the time, effort, and money that may have been invested. Delaying menstrual bleeding, by using the combined contraceptive pill or daily progesterone, for example, is perfectly acceptable; many women consult their general practitioners or family planning clinics for this reason in the run up to the Hajj season.

Contact lenses are also often problematic, particularly in arid conditions where sand can be blown into the eyes. Ocular lubricants (such as hypromellose 1% eye drops) should be used liberally to stop lenses adhering to the cornea. Temporarily using spectacles may be another option.

Although several makeshift dispensaries are erected during the Hajj season, these are often difficult to access, largely on account of the human mass. Pilgrims should ensure that they take small supplies of common remedies, such as analgesics and clove oil for dental pain. A simple travel pack containing adhesive dressings, an insect repellent, antiseptic cream, and water sterilisation tablets is also useful.

The "Hajj travel consultation"

All potential pilgrims must now be protected against meningococcal disease, and this opportunity to review patients can be used to impart other advice (box 6). Several known risks are associated with pilgrimage to Mecca and can mar the entire experience. That said, most of these problems should, with sensible precautions, now be preventable. However, in patients who have returned from pilgrimage doctors should be vigilant for signs of diseases such as meningitis, tuberculosis, hydatid disease, malaria, and hepatitis. Fever, rash, jaundice, pyoderma, foot ulcers, diarrhoea, or vomiting should alert a health-care professional to the possibility of an infection having been acquired during Hajj.

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- 1 Carlyle T. *On heroes, hero-worship and the heroic in history*. Lincoln: University of Nebraska Press, 1966:49-50.
- 2 Eaton G. *Islam and the destiny of man*. London: George Allen and Unwin, 1985:242.
- 3 Muslim Council of Britain. www.mcb.org.uk (accessed 7 Dec 2004).
- 4 Sarwar G. *Islam: beliefs and teachings*. London: Muslim Educational Trust, 1998:78-81.
- 5 Sabiq AS. *Fiqh us-sunnah: Hajj and Umrah*. Indianapolis: American Trust Publications, 1992:5.
- 6 Wolfe M. *The Hadj*. London: Seeker & Warburg, 1994:194-5.
- 7 Clarke CRA, Clark ML. Environmental medicine. In: Kumar PJ, Clark ML, eds. *Clinical medicine*. London: Ballière Tindall, 1994:756-7.
- 8 Al Ghamdi SM, Akbar HO, Qari YA, Fathaldin OA, Al-Rashed RS. Patterns of admission to hospitals during Muslim pilgrimage (Hajj). *Saudi Med J* 2003;24:1073-6.
- 9 Seraj ME. Heat stroke during Hajj (pilgrimage)—an update. *Middle East J Anaesthesiol* 1992;11:407-41.
- 10 Ghaznawi HI, Ibrahim MA. Heat stroke and heat exhaustion in pilgrims performing the Hajj (annual pilgrimage) in Saudi Arabia. *Ann Saudi Med* 1987;7:323-6.
- 11 Adam JM. Effect of climatic extremes. In: Dawood R, ed. *Travellers' health*. Oxford: Oxford University Press, 1986:238.
- 12 Moxham J, Souhami RL, Walker JM. Physical and environmental causes of disease. In: Souhami RL, Moxham J, eds. *Textbook of medicine*. London: Longman, 1990:77-8.
- 13 Keatinge WR. Environmental factors and disease. In: Ledingham JGG, Warrel DA, eds. *Concise Oxford textbook of medicine*. New York: Oxford University Press, 2000:1904-5.
- 14 Henahan J. Treating heat stroke in pilgrims to Mecca. *JAMA* 1982;247:3302.
- 15 Salisbury D, Begg N, eds. *Immunisation against infectious diseases*. London: Stationery Office, 1996:146.
- 16 Jones DM, Sutcliffe EM. Group A meningococcal disease in England associated with the Hajj. *J Infect* 1990;21:21-5.
- 17 Salisbury D, Begg N, eds. *Immunisation against infectious diseases*. London: Stationery Office, 1996:147-54.
- 18 Alzeer A, Mashlah A, Fakim N, Al-Sugair N, Al-Hedaithy M, Al-Majed S, et al. Tuberculosis is the commonest cause of pneumonia requiring hospitalization during Hajj. *J Infect* 1998;36:303-6.
- 19 Al-Harthi ASM, Al Harbi M. Accidental injuries during Muslim pilgrimage. *Saudi Med J* 2001;22:523-5.
- 20 Khan SA, Bhat AR, Khan LA. Hypoglycaemia in diabetics during Hajj. *Saudi Med J* 2002;23:1548.
- 21 Figueroa E. Diabetes and the pilgrimage of Hajj: piloting of an education programme for Muslim patients with diabetes. *Diabetes Today* 2003;6:41-2.

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Corrections and clarifications

Randomised controlled trial of an occupational therapy intervention to increase outdoor mobility after stroke

A few errors inadvertently slipped through in this paper by P A Logan and colleagues (11 December, pp 1372-4). In the full (bmj.com) version, in three instances the confidence limits became transposed: in figures 2 and 3 the confidence intervals for the patient's general health questionnaire should have been -3.77 to 1.02 and -3.54 to -1.14 respectively, and in figure 3 the interval for the carer's general health questionnaire should have been -3.28 to 2.41. Errors also occurred in table 2 (full and abridged versions of the paper): the number (proportion) of controls who got out of the house as much as they wanted should have been 31 (38%) at four months and 29 (35%) at 10 months; the numbers needed to treat at these two stages were 3.7 and 3.8 respectively.

Systematic review of lipid lowering for primary prevention of coronary heart disease in diabetes

It's never too late to alert us to an error. The authors of this paper published nearly two years ago (Apoor S Gami and colleagues) recently noticed an error in their article (*BMJ* 2003;326:528-9). In the table, the number of diabetic patients randomised in the WOSCOPS trial should read 76 (not 1037, as was stated). The authors state that the results and conclusions of their systematic review were not affected by this error.

Retraction of correction

The *BMJ* was wrong to have published the correction (1 January, p 41) to Abi Berger's review of the *Dispatches* television programme "MMR: What they didn't tell you" (*BMJ* 2004;329:1293). Her original statement that the results of a study conducted by Dr Nick Chadwick "were not made public" was in fact correct; we are therefore retracting the correction.

A memorable patient

With a serene face

An 82 year old Chinese woman, a Buddhist, with a recurrent carcinoma of the stomach had been cared for by our hospice home care team for two months. On 8 August, she complained of increased pain in her back, and her condition had deteriorated considerably. After a discussion with her daughter, a Catholic nun working as a hospice nurse, we decided to give her morphine every six hours instead of simply increasing her existing codeine dose. A single dose was given at 12.35 pm, and the patient died that evening.

Having recently had a similar incident with morphine, when the patient's family reacted badly to the sudden death of their loved one, I was apprehensive when the patient's daughter asked to see me 10 days later. To my relief, she came with a thankyou card and a donation. When I asked her whether she was surprised that her mother had died after a single dose of morphine, she said no and told me something that was an eye opener. She said that she had spoken a few times with her mother about "letting go" as her condition worsened, but her mother had said, "How can I go when I am in pain?"

Being a Buddhist, she believed in dying with a serene face, and her daughter told me, "The morphine relieved her pain, and she left peacefully." She also said that her mother had wanted to die before 16 August, when the seventh Chinese month ("Hungry Ghosts month") began, and had wanted a seven day funeral. So she went when she was at peace, and her funeral could be completed on 15 August.

Ramaswamy Akhileswaran *medical director, Hospice Care Association, Singapore* (akhileswaran@hotmail.com)

We welcome articles up to 600 words on topics such as *A memorable patient*, *A paper that changed my practice*, *My most unfortunate mistake*, or any other piece conveying instruction, pathos, or humour. Please submit the article on <http://submit.bmj.com>. Permission is needed from the patient or a relative if an identifiable patient is referred to. We also welcome contributions for "Endpieces," consisting of quotations of up to 80 words (but most are considerably shorter) from any source, ancient or modern, which have appealed to the reader.